stomach and duodenum are the points of complaint, while the terminal findings are those of a lower bowel condition. I am satisfied that gastric and duodenal ulcers recover much more rapidly if a goodly part of the treatment is directed toward the colon, and there is at least some reason to suspect that lower bowel irritation may bear a part in the etiology in stomach and duodenal ulcers.

DOCTOR CLARKE (closing)—The etiology of peptic ulcer is a very complex matter and I think all will agree that the last word has not been said upon the subject. *I do not wish to be understood as putting forward a new theory as to the cause of ulcer, thus supplanting all previous theories.* I do, however, wish to say emphatically that I believe the influence of bowel irritation over the ulcer-bearing area is a very harmful one and may cause ulcer. To say the least it creates a condition splendidly adapted to assist the formation of ulcer by embolism or any other means. It is conceivable that embolism could occur in a normal stomach and the resultant ulceration heal spontaneously, causing no trouble. With a pylorospasm present and secretion retention, with loss of the rest period and duodenal regurgitation, the chance of ulceration healing spontaneously is greatly reduced. *In view of this I feel that attention to bad bowel conditions should form a part of all ulcer treatments.*

I notice Doctor Wessels' doubts if pylorospasm can be caused by colon irritation. There are many writers of prominence to cite as proof that others believe and teach it. Charles G. Stockton, writing in "Oxford Loose-Leaf Medicine," emphatically states it in several places. If the doctor wishes the volume and page, I would cite volume III, page 269, under the subhead of "Sympathetic reactions between the stomach, colon and small intestine."

I was impressed very differently than Doctor Wessels by reading autopsy records. I felt they did show the association of peptic ulcer and colon lesions. It is also hard for me to understand the doctor's statement that "atonic constipation is not associated with demonstrable inflammation." It is my understanding that an atonic colon is only a later stage of what was at one time a spastic condition.

I am much interested in the three questions propounded by Doctor Kilgore. These questions I have asked myself for sometime, and I have stated in this paper what I think the answer is. In number one, Doctor Kilgore limits it to constipation, but I think there is often more irritation in conditions of loose frequent stools than with constipation. In going over my records there is an antedating bowel history in a surprisingly large number. I would be more than human if I could claim entire freedom from bias—subconscious or otherwise. Be that as it may, I feel that most all the ulcer cases I see have an antedating bowel story to tell.

Doctor Kilgore rightly suggests that there may be a causal factor underlying both the ulcer and bowel condition, with which I fully agree. I can easily conceive of an endocrine dyscrasia doing such a thing. It may be also that some day it will be shown exactly what that causal factor is.

I have greatly enjoyed the discussion and am pleased to note that Doctor Barrow recognizes some worth in the point I am trying to make in this paper. There are many points that could be taken up in rebuttal, but wishing to keep myself in proper space and proportion I will not attempt anything further.

The medical profession by and large, the world over, repudiates Freud, his theory of the neuroses, and his system of therapy. Psychologists have always denied him, and now artists, litterateurs and critics are beginning to line up with them. To leave this statement unqualified would do Freud an injustice and the public an unfairness. . . . Were they asked whether they subscribed to some of his doctrines it is likely that more than half of them would reply, "I do." . . . Freud has taken a few sick souls and after studying them he has reconstructed a sick world, a horrible world in which no one save a few mystics and monsters want to live.—Joseph Collins, The Dearborn Independent, August 21, 1926.

SINUS INFECTION IN CHILDREN

By FRANCIS M. SHOOK *

DISCUSSION *by E. S. Budge, Los Angeles; J. A. Connell, Riverside; Rexford Hoobler, Oakland; Clifford Sweet, Oakland.*

THIS consideration of sinusitis in children is limited to a series of patients with maxillary antrum infections, varying in ages from four years to twelve which were cared for during the past two years.

Symptomatology—general. The most common picture is that of a child below par physically, with no sharply defined symptoms indicative of the precise location of the chronic infection. This may be illustrated by patient R. B., age 8 years. For several years this child had been under medical supervision. The child was subject to recurrent febrile attacks of unknown origin. These attacks would last from a few days to several weeks, and were marked by prostration and fever. The child was below par physically, and the repeated toxemia had produced cardiac symptoms which indicated myocardial involvement. Repeated physical examinations were negative. On nasal examination a diagnosis of probable chronic low-grade maxillary antrum infection was made because of the constant presence in the floor of the nose of mucopurulent secretion. The diagnosis was confirmed by operative intervention. The after-treatment cleared up the antrum infection, and the results have been very striking. The child has become a normal one as regards physical condition, the febrile attacks have ceased and the damaged cardiac muscle has resumed normal function. Another child, A. B., has been under the supervision of a pediatrician for one year, during which time there were only a few short periods of normal temperature. The abnormal temperature could be explained by a recurrent pyelitis, the etiology of which was finally traced to a chronic low-grade maxillary antrum infection. The diagnosis for this patient was made without any difficulty. The child was a mouth-breather, although the tonsils and adenoids had been removed. The nose was filled with a mucoid discharge, which could be removed in large quantity by a suction pump. The treatment consisted of surgical drainage of the maxillary antrums followed by prolonged after-treatment by lavage of the maxillary antrums. The results have been very good. There has been a continued improvement in the general condition, and the child's temperature has remained normal except during one mild attack of pyelitis and one throat infection. A different phase of this subject may be illustrated by the following: Patient W. C., age 6 years. For the past year this child's mother made the following observations: (1) There seemed to be present a constant "cold" of the nasal variety. (2) The child would awaken suddenly nearly every night and awaken the household with a violent coughing spell. (3) Although in fair health the

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child was not quite up to standard. Careful general examination by the family pediatrician at different intervals showed moderate quantities of mucopurulent discharge on the floor of the nose, with some crusting about the anterior tips of the middle turbinates. Surgical drainage of the maxillary antrums was performed and the usual after-treatment instituted. There was marked improvement and within a few days the night spasms of coughing had ceased. The antrum infection subsided with lavage performed twice a week. The history of K. O. is an illustration of the type of maxillary antrum infection in children which simulates a sensitization. Age at time of original examination, 6 years. Symptomatology—repeated attacks of coryza and bronchitis. There was present impaired nasal respiration, which was very pronounced at night. The tonsils and adenoids were removed, with some improvement. The patient's postnasal adenoids were removed twice at intervals of about six months with some improvement each time. After it was definitely established that there would be no recurrence of the postnasal adenoid, nasal examination showed mucopurulent secretion on the floor of the nose, with slight crusting on the anterior tips of the middle turbinates. This child was then kept under observation for about two years, during which time repeated general and special examinations were made, and climatic, dietetic and local treatment instituted. The symptomatology remained about the same. There was frequent sneezing spells, recurrent attacks of bronchitis and constant mucopurulent discharge. The child's general condition remained below par, and she belonged to the group known as the "nervous" child. Surgical drainage of the maxillary antrums was performed about a year ago with very good results. Since then there has been about 80 per cent improvement in the symptoms.

Another interesting history is that of the patient V. G. At the age of 3½ years the patient had an upper respiratory tract infection which was followed by a thick, greenish mucopurulent nasal discharge. The maxillary antrums were irrigated at this time under a general anesthetic of short duration. The child remained in fairly good condition for about nine months, when there was another upper respiratory tract infection with a complicating middle-ear abscess. The child's health was then fair for about six months, when there was a febrile attack of unknown origin accompanied by convulsions. The temperature rose to 105.6 degrees, and some months afterward there was a similar attack which did not subside completely. The child's temperature rose from 100 to 101 degrees nearly every day, and the general physical condition was poor. A diagnosis of maxillary antrum infection was made on account of the presence of mucopurulent secretion of varying amounts in the nares on repeated examinations. In November, 1924, surgical drainage of the maxillary antrums was performed. The results were not very good, and in January, 1925, another general anesthetic was given and the surgical work repeated. Since then the antrums have been irrigated twice weekly. At first there was present in the antrums a large quantity of mucopurulent discharge. At present this has disappeared, and there has been an astonishing improvement in the child's condition. The temperature is normal, weight and strength have been regained. The after-treatment of patients with these infections is sometimes tedious and prolonged, and results are not apparent for varying lengths of time from a few weeks to several months after surgical intervention. When these probabilities have been explained to the parents they have all given hearty co-operation. Gastrointestinal symptoms may be present, as the following history illustrates:

Patient, age 6½ years. About one and one-half years ago there began recurrent attacks of nausea and vomiting accompanied occasionally with a rise of temperature. There was present in the vomits greenish yellow mucus. The tonsils and adenoids were removed with some benefit. On general examination no reason could be found for the symptoms. There was slight impairment of nasal respiration and the child's mother reported frequent "colds." The child was subnormal physically. Hygienic and dietetic treatment was instituted with some benefit. Nasal examination showed a considerable quantity of the usual mucopurulent secretion on the floor of the nares, with crusting on the anterior tips of the middle turbinates. A diagnosis of low-grade maxillary antrum infection was made and operation performed with the usual after-treatment. There has been a very marked improvement in the patient's general condition. She now sleeps well when formerly she was very restless; the recurrent gastrointestinal symptoms have ceased. She is now gaining in weight rapidly, as compared with a former slow gain, and the antrum infection is clearing up gradually.

The allergic type may be illustrated by the following history: Patient H. I., age 6 years. Since birth nasal respiration has been impaired. At 3½ years of age the child's tonsils and adenoids were removed with very slight improvement. Frequent physical examinations were made and the patient's diet and general condition supervised by the family pediatrician. Three years ago the child developed asthma; the attacks were worse during the winter months and were not influenced favorably by general measures. In November, 1924, nasal examination showed considerable mucopurulent secretion on the floor of the nose. This could be removed by the suction pump in surprisingly large quantity. The child's maxillary antrums were drained surgically and the usual after-treatment instituted. There was a large quantity of secretion present at each irrigation. During January, 1925, the drainage openings in the antrums were re-opened, and this was repeated again in March. Improvement in this patient has been about 90 per cent. The nasal respiration is now fair, the asthmatic attacks have been absent for five months and the child is developing normally. An analysis of the remaining twelve patients shows only slight variations from the results noted above.

In order of occurrence the following symptoms have been present: (1) Impaired nasal respiration. (2) Nasal examination usually shows varying amounts of mucopurulent secretion. (3) There is

usually present general symptomatology of absorption from local infection.

Treatment—The treatment which is giving the best results is as follows: (1) Intranasal drainage of the maxillary antrums is performed under a short general anesthetic, usually nitrous oxide. (2) The maxillary antrums are kept as clean as possible by irrigation with normal salt solution. (3) Careful supervision of the patient's general condition is made by the pediatrician.

DISCUSSION

E. S. Budge, M. D. (Chapman Building, Los Angeles)—The subject of sinusitis in children is of great importance not only to the rhinologist and pediatrician, but more so to those in general practice. Comparatively few cases complaining of the symptoms outlined in his paper come directly to the specialist.

Many symptoms resulting from infection of the facial paranasal sinuses, especially the maxillary in young children are treated as general conditions. These patients come to the specialist only as a last resort when all other treatment has long since failed to restore the child to health.

Many times when a rhinologist is consulted he, too, often does not give enough attention to the sinuses. It is not generally realized that sinus infection is of equal importance to that of tonsils both in its direct and indirect effect; in the production of rheumatic fever, chorea, pyelitis, nephritis, anemia, and malnutrition. While in infants the symptoms may be wholly referable to the gastrointestinal tract, to say nothing of the many cases of fever of unknown origin.

In my opinion sinus involvement in children is much more common than is often suspected. Like all other processes of infection the vast majority heal spontaneously, but many not until a great deal of damage has been done in the way of edema and hypertrophy of the mucous membrane of the nose as a result of irritating discharge causing narrowing or obstruction to the nares, further hindering sinus drainage. After all proper drainage will cure all cases, this being our only object when operation is instituted.

As a pool of mucopus in the floor of the nose is suggestive of sinus involvement, we may add to the strength of this finding by clearing the nose thoroughly with suction or swab. Then have the patient hold the head forward for ten minutes; if quantities of mucopus reappear it is fairly certain of sinus. Because inflammatory conditions of the infundibulum and mucous membrane do not cause an immediate reappearance, it must come from a place of retention, and, of course, from the anterior series if draining over the lower turbinate. I have found it convenient for observation to shrink the spongy tissue of the turbinate by touching the anterior tips with cotton probe moistened with ephedrin sulphate 5 per cent.

Such local symptoms as cough of a persistent character, bronchial findings, pharyngeal and laryngeal irritations, accompanied by mucopus in the nose may mean sinus infection, even in the absence of general symptoms.

A history of typhoid fever, influenza, measles or other infectious diseases is of importance as a causative factor; such history should direct our attention to the sinuses, always remembering that the absence of mucopus and crusts does not exclude sinus.

J. A. Connell, M. D. (Riverside, California)—If we note carefully the repeated and prolonged colds which children suffer, with a continuous discharge of pus or mucopus from the nose, we will find that many of them are due to infections of the sinuses.

It has been found that the antra are the first sinuses to become infected in children, in the majority of cases.

It is seldom there is complete blocking of all of the openings of the sinuses, because the sinus openings are larger proportionately than they are in adults. This is also a good reason for the more persistent discharge from the nose in children.

The only cause for dental infection would be trauma or death of the pulp in the upper first molars, which erupt at the age of 6 years. Due to the lack of dental attention the pulp may become involved before the age of 12 years, and cause the same type of antral infection that we find in adults.

Local examination is very important for antral disease before opening the antrum, and we must consider the following symptoms: (1) the amount, character and location of the discharge from the nose; (2) the degree of tenderness over the antrum and surrounding parts; (3) transillumination; (4) x-ray; (5) exploratory puncture.

I think it is seldom necessary to open the antra if we would take a set of x-ray plates after appropriate medical treatment has been instituted, then we would probably find that the trouble had cleared up.

Although there has been a tendency of a great many rhinologists to puncture the antra at frequent intervals to wash them out, if we give the proper medical treatment first along the same line as given adults usually it would be unnecessary to open the antrum.

As long as the normal osteum is open sufficient drainage takes place, but there is always a risk that a permanent plug will form which will necessitate opening the antra.

The puncture has this advantage: If any discharge is found in the antrum it can be washed out through the needle, unless the infectious material is so thick it will not go through. It may be a serum, seropus or pus.

Most of the cases referred to the rhinologist for diagnosis are of the chronic form, and therefore should be opened and washed out, especially if the tonsils and adenoids have been removed with only slight improvement.

A continued irritation of the membranes in the antral cavities may cause granulations to form, causing the patient to have a reoccurrence of the acute infection.

Children are not so apt to have a reoccurrence of antrum infection as adults, due to the large openings of the antrum into the nose.

Rexford Hoobler, M. D. (Medical Building, Oakland, California)—Up to the last few years it has been the general opinion that the maxillary sinuses in children are not sufficiently developed prior to puberty to give rise to infections. This opinion, however, is erroneous, as the maxillary sinuses are well developed at the beginning of the second dentition and a considerable cavity with outlets exists as soon as the child has obtained its temporary teeth. From this time on a child is subject to maxillary sinusitis.

The first time I realized that this condition could occur in young children the infection was caused by a dentist breaking through a carious tooth into the antrum. Since then I have hesitated to use nasal irrigation in acute nasal infections for fear of carrying the infection into the antrum. Many physicians prescribe snuffing of saline solution from a cup or palm of the hand for colds which seems to me also a dangerous procedure. I should like to hear from Doctor Shook what technique or conditions he feels is conducive to the development of sinusitis in children.

Following antrum puncture I have found children to be nervous, irritable, and anemic. They have no appetite and frequently complain of headache and nausea. Tonics such as iron, arsenic, and nux vomica are valuable. It frequently is necessary to give five small meals a day instead of three large ones. Hygiene of the oral and pharyngeal cavities is important. It is very often advisable to keep the child in bed even though he has no increased temperature. With nutritional improvement and good drainage the infection usually disappears in a few weeks.

The type of infection is not common in children, and Doctor Shook's experience with such a large group should enable those of us working with children to diagnose this condition more intelligently in the future.

Clifford Sweet, M. D. (242 Moss Avenue, Oakland, California)—Maxillary antrum infections are very common in children of all ages. They occur as a part of every acute upper respiratory infection of more than very mild grade and short duration. The profuse mucopurulent secretion caused by the common cold arises from the antrums; no other portion of the nasal structures can produce it. If the infection is not prolonged because of its own virulence or because of the poor resistance of

the child complete healing takes place after a short time with no structural change within the antrums. However, if a very virulent infectious process gains entrance to the antrums, or if reinfection occur at frequent intervals, permanent damage is done; a pathological condition is begun and a chronic sinusitis results. This in turn is too often followed by impaired general health, atrophic rhinitis, infection of the other paranasal sinuses, as they develop and any or all of the disease processes which are caused by chronic focal infection. Good health, therefore, is the primary prophylactic measure. An excellent state of nutrition, which is possible only with ample food, sufficient vitamins and exposure naked in the direct rays of the sun, means fewer respiratory infections and these of shorter duration.

The infection, when it has become subacute or even when chronic, may often be cleared up by improving the child's general condition. When doubt exists as to the necessity of surgical interference the general measures, rest, a carefully arranged diet with cod liver oil, heliotherapy or the quartz lamp, and in selected cases an autogenous respiratory vaccine should be given fair trial. In deciding whether or not surgery should be advised, the appearance of the anterior portion of the middle turbinate seems to be the best guide. If the mucous membrane of this area shows a beginning atrophic rhinitis, surgery is indicated. After atrophic rhinitis has made its appearance I have not seen a spontaneous recovery.

Shook is calling our attention to a most important and heretofore neglected seat of infection in children. I have referred him many cases with gratifying results. This work promises an opportunity to prevent many children from struggling through years of impaired health—to arrive at adult life with chronic sinus infections, the treatment of which is at present far from satisfactory.

COSMETIC SURGERY OF THE THYROID GLAND UNDER LOCAL ANESTHESIA †

By CHARLES CALVIN TIFFIN *

UNLIKE most other regions of the body, the scar following thyroid surgery must be placed on trial before the critical observation of the patient, the patient's friends, and others. As surgeons we have probably not shown the proper interest in the cosmetic effects of our work but rather in the therapeutic results of the operation, in consequence of which a great number of women in particular have refused operation, preferring to carry the goiter through life rather than have what they call "a large ugly scar." This idea has been helped along to a large extent by friends, so-called, who have failed to realize the great service to be rendered the patient in terms of better health and extended life.

It is unnecessary to say that the scar should be no objection to whatever is necessary to save life, for we are supposed to be scientific men with one great object in view—the restoration of good health and life conservation. With this idea in mind we have gone on through several generations of thyroid surgery, making the same large scar as our great forebears in this interesting field. Of course, we are not to be severely criticized, for in all scientific research the refinements and niceties always have followed the somewhat cruder earlier work.

Public opinion largely accepts the fact that goiter operations in the hands of skilled operators offer little hazard to the life of the individual, especially if the patient is cared for early. Let us demonstrate, then, that not only can we do a thyroidectomy safely, but that we can do it so as to make the scar almost invisible. In order to succeed in this we must remember, first, that all scars are produced by the direct injury of the operation or to violence or roughness in handling the tissues, and, second, to our tendency to overlook the great principle that all tissues must be placed in such a position during and in closing the operation that a normal-looking neck will be the result. It is not enough simply to close the wound superficially so that it appears smooth and nice in appearance.

Important questions for the surgeon to ask himself are:

How will this neck look in six months or a year?

Have I carefully studied the contour of the neck to be operated on, considering its present deformity; just how much gland is to come out, and just where and how long the incision is to be; and have I a very sharp knife with which to make the incision?

Am I going to remember that this is done under a local anesthetic, and that my patient, while not suffering pain, will not enjoy the least bit of roughness in sponging or in handling the tissues, and am I really aware of the fact that the principal cause of shock is lack of gentleness during the operation?

Have I carefully dissected the skin of the lower flap as well as the upper, knowing that if the upper flap is freed and the lower not freed the result will be an overhanging scar?

Have I been careless under the surface; have I neatly and carefully resected the thyroid gland, or have I left irregular masses here and there?

Have I cut muscles that should not have been cut or have I interfered with the nerve supply of the sternomastoid muscles which will be certain to cause atrophy?

Have I cleared the trachea of all thyroid tissue so that there will be no regrowth of the gland in the midline with its resultant deformity?

Have I made a nice straight-line incision in the fascia so that a neat smooth scar will follow here, or have I bruised the fascial edges, making likely a slough with deformity in midline?

Have I ligated the superior poles of the thyroid gland high enough to prevent regrowth in this locality, and in ligating the superior pole have I been careful not to carry the suture into the subcuticular tissue, thus producing an ugly-looking depression in this region?

Have I a perfectly dry clean field after the operation is finished, or am I leaving in bits of tissue, clots or small bleeders as an inspiration to deformity and adhesions, and have I carefully closed and sutured all of the small cut muscles?

Have I placed my twenty-four-hour drain through the angles of my incision by means of a puncture wound through the sternocleidomastoid muscle, or

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